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09/899,537	07/06/2001	Hiroyuki Miyahara	21994/0025	3396

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EXAMINER	
DANIELS, ANTHONY J	

ART UNIT	PAPER NUMBER
2615	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/899,537	MIYAHARA, HIROYUKI	
	Examiner	Art Unit	
	Anthony J. Daniels	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,5,6,8* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/9/2005 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection. *Examiner is using the same reference to reject, but using a different embodiment within the reference; hence, new grounds are given.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2 are rejected under 35 U.S.C. 102(b) as being anticipated by Parulski et al. (US # 5,440,343).

As to claim 1, Parulski et al. teaches an image sensing apparatus which outputs electric charges being stored in a plurality of photoelectric converting elements disposed horizontally and

vertically in a matrix as an electric signal (see Figure 4; Col. 2, Lines 10-14), said image sensing apparatus comprising: a plurality of vertical transmitting CCDs (see Figure 4, Reference Number "44") for transmitting electric charges read out from said plurality of photoelectric converting elements in a vertical direction, a horizontal transmitting CCD (see Figure 4, Reference Number "42") for transmitting the electric charges transmitted from said plurality of vertically transmitting CCDs in a horizontal direction and for outputting the electric charges through an outputting section (see Figure 4, Reference number "42", *{Note the arrows pointing out of the horizontal register; meaning, since charges are being blocked out of the horizontal register, there is an outputting section inherent in the register.}*), and an intercepting section (Figure 8, horizontal group of clearing structures " 46` " at GATE 4 of the 256 pixel region) for intercepting all electric charges (Figure 9, see Col. 7, Lines 12-36; 256 pixels are not received by the horizontal register "48") being transmitted from a whole area (Figure 9; Col. 7, Lines 12-36; *{The whole area denoted by 256 pixels is the whole area.}*) in a matrix of a plurality of photoelectric converting elements in a horizontal direction and a plurality of photoelectric converting elements in the vertical direction (Figure 9, Col. 7, Lines 12-36; *{The charge clearing structures are an area that intercepts the charges disallowing them to be received by the horizontal register "48".}*), wherein the area is a part of an image sensing are disposed only on a side farther and never on a side nearer to said outputting section of said horizontal transmitting CCD (Figure 9, charge clearing structures " 46' "; *{As can be seen, the charge clearing structures of GATE 4 in the 256 pixel region are disposed on a farer side from the outputting section of horizontal transmitting CCD, indicated by the arrows pointing away from the sensor.}*); wherein a picture signal obtained from a first area is outputted with being intercepted

by said intercepting section in a first picture taking mode (see Figure 9, 1280 pixel section; Col. 7, Lines 12-36), and another picture signal obtained from a second area being wider in a horizontal direction (see Figure 9, 1536 pixel area) than said first area is outputted without being intercepted by said intercepting section in a second picture taking mode (see Col. 5, Lines 22-31; *In the still picture taking mode, different from the NTSC readout mode, the charge clearing structures 46 are also disabled in the second embodiment of the invention.*).

As to claim **2**, Parulski et al. teaches an image sensing apparatus in accordance with claim 1, wherein said first picture taking mode is a motion picture taking mode (see Col. 7, Lines 43-46) for taking a motion picture signal and said second picture taking mode is a still picture taking mode (see Col. 5, Lines 22-25) for taking a still picture signal, wherein a transmission rate of electric charge of said horizontal transmitting CCD is set to a same rate in said motion picture taking mode and in said still picture taking mode (see Col. 7, Lines 12-36; *If there is insufficient time to process 256 pixels, this means that the same clock frequency is being used to clock the charges out, horizontally. Referring to Figure 9, hypothetically speaking, if the clock frequency of the HCCD (horizontal register) is 4 pixels per second, it would take 320 seconds to clock the entire frame of 1280 pixels out in the NTSC readout mode. In 320 seconds, at a rate of 4 pixels per second, only 1280 pixels of the 1536 pixel frame would be clocked out in the still picture mode leaving 256 pixels left in the horizontal register; thus, showing that since there is not enough time process the 256 pixels, the clock frequency, i.e. transmission rate, of the horizontal register is the same for both modes.*).

Claim Rejections - 35 USC § 103

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. (see Patent Number above) in view of Oda (US #5,528,291).

As to claim **3**, Parulski et al. teaches an image sensing apparatus in accordance with claim 1, wherein said first picture taking mode is a motion picture taking mode (see Col. 7, Lines 43-46) for taking a motion picture signal, and wherein a transmission rate of electric charge of said horizontal transmitting CCD is set to a same rate in said motion picture taking mode and in a high definition motion picture taking mode (to be described next; *see explanation in italics in claim 2*). The claim differs from Parulski et al. in that a second picture taking mode is required which is a high definition motion picture taking mode of which a number of pixels per one frame is larger than that of said motion picture signal.

In the same field of endeavor, Oda teaches a method for producing high motion resolution images (see Col. 5, Lines 13-17). These high definition motion images are outputted from the cameras with 525 scanning lines, approximately the amount in NTSC signals, which are the motion signals taught above by Parulski et al. and contain on the order of 400,000 pixels (see Oda, Col. 1, Lines 24-27; see Parulski et al., Col. 2, Lines 1-9), *{NTSC resolution signals can be taken in motion or still format, such signals are considered to be medium resolution images.}*). Parulski et al. teaches how HDTV motion signals, signals taught by Oda, have to be downconverted to obtain NTSC motion signals (see Parulski et al., Col. 1, Lines 45-54); thus, showing that the high resolution motion picture signals have a larger number of pixels than those taught by Parulski et al. (NTSC motion signals). In light of the teaching of Oda, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a modification where high definition motion pictures could be taken using the motion still

electronic image sensing apparatus of Parulski et al. while providing a low power loss (see Oda, Col. 5, Lines 14-16). *Also, note that the horizontal transmission rate would be same because the number of pixels transferred would be on the same order of the number of pixels transferred in the still picture taking mode taught by Parulski et al.*

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. (see Patent Number above) in view of Kawaoka et al. (US #5,251,036).

As to claim **4**, Parulski et al. teaches an image sensing apparatus in accordance to claim 1 wherein a transmission rate of electric charge of said horizontal transmitting CCD is set to a same rate in said first still picture taking mode and in said second still picture taking mode (to be described next; *see explanation in italics in claim 2*). The claim differs from Parulski et al. in that a first mode is a still picture taking mode for taking a still picture signal and a second mode is a high definition still picture taking mode for taking a high definition still picture signal composed of a larger number of pixels in comparison to said still picture signal.

In the same field of endeavor, Kawaoka et al. teaches a high definition still picture camera that reads charges outputted from a CCD, capable of forming high resolution images and low resolution images (see Abstract, Lines 1-3, 28-32; Col. 1, Lines 65-68, Col. 2, Lines 1-5). The number of pixels in the high resolution images being greater than the low resolution images is taught in Kawaoka et al (see Col. 1 Lines 30-34). In light of the teaching from Kawaoka et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the camera taught in Parulski et al. by outputting both high and low resolution still images, wherein the number of pixels in the high definition still picture taking mode is larger in

comparison to the still picture taking mode. Such a modification would increase the versatility of the apparatus and subsequently the desirability. It is noted that the extra pixels would be processed using auxiliary HCCDs, taught by Parulski et al. (see Figure 9, Reference Number "49"; Col. 7, Lines 37-46) without increasing the transmission rate of the horizontal transmitting CCD.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 5,6,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. (see Patent Number above) in view of Hirasawa et al. (US # 6,473,120).

As to claim **5**, Parulski et al. teaches an image sensing apparatus comprising: a solid state image sensing device; said solid state image sensing device further comprising: a plurality of vertical transmitting CCDs (see Figure 4, Reference Number "44") for transmitting electric charges read out from said plurality of photoelectric converting elements in a vertical direction; a horizontal transmitting CCD (see Figure 4, Reference Number "42") for transmitting the electric charges transmitted from said plurality of vertically transmitting CCDs in a horizontal direction and for outputting the electric charges through an outputting section (see Figure 4, Reference number "42", *{Note the arrows pointing out of the horizontal register; meaning, since charges are being blocked out of the horizontal register, there is an outputting section inherent in the*

register.}), and an intercepting section (Figure 8, horizontal group of clearing structures " 46` " at GATE 4 of the 256 pixel region) for intercepting all electric charges (Figure 9, see Col. 7, Lines 12-36; 256 pixels are not received by the horizontal register "48") being transmitted from a whole area (Figure 9; Col. 7, Lines 12-36; *{The whole area denoted by 256 pixels is the whole area.}*) in a matrix of a plurality of photoelectric converting elements in a horizontal direction and a plurality of photoelectric converting elements in the vertical direction (Figure 9, Col. 7, Lines 12-36; *{The charge clearing structures are an area that intercepts the charges disallowing them to be received by the horizontal register "48".}*), wherein the area is a part of an image sensing are disposed only on a side farther and never on a side nearer to said outputting section of said horizontal transmitting CCD (Figure 9, charge clearing structures " 46' "; *{As can be seen, the charge clearing structures of GATE 4 in the 256 pixel region are disposed on a farer side from the outputting section of horizontal transmitting CCD, indicated by the arrows pointing away from the sensor.}*); wherein a picture signal obtained from a first area is outputted with being intercepted by said intercepting section in a first picture taking mode (see Figure 9, 1280 pixel section; Col. 7, Lines 12-36), and another picture signal obtained from a second area being wider in a horizontal direction (see Figure 9, 1536 pixel area) than said first area is outputted without being intercepted by said intercepting section in a second picture taking mode (see Col. 5, Lines 22-31; *In the still picture taking mode, different from the NTSC readout mode, the charge clearing structures 46 are also disabled in the second embodiment of the invention.*). The claim differs from Parulski et al. in that it further requires a controller for controlling said solid state image sensing device to move a first point disposed in an image sensing area of said solid state image sensing device to a center of an optical axis if a lens in a first picture taking

mode and to move a second point different from said first position disposed in said image sensing area to the center of the optical axis of the lens in a second picture taking mode.

In the same field of endeavor, Hirasawa et al. teaches a camera unit that is switched between a still/motion mode (Figure 10A, still/movie mode "135"), wherein the still mode represents an electronic teleconverter mode, switched on, utilizing "pixel shift" to provide a high definition still image, and the video mode represents an electronic teleconverter mode switched off (Col. 15, Lines 57-67). The "pixel shift" is accomplished by moving optics to provide different optical axes and obtain image data for each relative position of the optical axes. These images are synthesized to output an image (Figure 7, Figure 8; Col. 11, Lines 59-67; Col. 12, Lines 1-50). *This is not performed for the movie mode.* In light of the teaching of Hirasawa et al., it would have been obvious to one of ordinary skill in the art to provide the "pixel shift" process to the imaging apparatus of Parulski et al. in the still mode, because an artisan of ordinary skill in the art would recognize that this would provide a high definition image in the still mode (see Hirasawa et al., Col. 12, Lines 40-46).

As to claim **6**, Parulski et al., as modified by Hirasawa et al., teaches an image sensing apparatus in accordance with claim 1, wherein said first picture taking mode is a motion picture taking mode (see Parulski et al., Col. 7, Lines 43-46) for taking a motion picture signal and said second picture taking mode is a still picture taking mode (see Parulski et al., Col. 5, Lines 22-25) for taking a still picture signal, wherein a transmission rate of electric charge of said horizontal transmitting CCD is set to a same rate in said motion picture taking mode and in said still picture taking mode (see Parulski et al., Col. 7, Lines 12-36; *If there is insufficient time to process 256 pixels, this means that the same clock frequency is being used to clock the charges out,*

horizontally. Referring to Figure 9, hypothetically speaking, if the clock frequency of the HCCD (horizontal register) is 4 pixels per second, it would take 320 seconds to clock the entire frame of 1280 pixels out in the NTSC readout mode. In 320 seconds, at a rate of 4 pixels per second, only 1280 pixels of the 1536 pixel frame would be clocked out in the still picture mode leaving 256 pixels left in the horizontal register; thus, showing that since there is not enough time process the 256 pixels, the clock frequency, i.e. transmission rate, of the horizontal register is the same for both modes.).

As to claim **8**, Parulski et al., as modified by Hirasawa et al., teaches the image sensing apparatus in accordance with claim 5, wherein said first picture taking mode is a first still picture taking mode for generating a still picture signal (see Parulski et al., Col. 5, Lines 32-34; *{A motion picture is a series of still images.}*) and said second picture taking mode is a high definition still picture taking mode for generating a high definition still picture signal (see Parulski et al., Col. 5, Lines 22-31) composed of a larger number of pixels in comparison with said still picture signal (see Parulski et al., Figure 8); and wherein a transmission rate of electric charge of said horizontal transmitting CCD is set to a same rate in said first still picture taking mode than in said second still picture taking mode (see Parulski et al., Col. 7, Lines 12-36; *If there is insufficient time to process 256 pixels, this means that the same clock frequency is being used to clock the charges out, horizontally. Referring to Figure 9, hypothetically speaking, if the clock frequency of the HCCD (horizontal register) is 4 pixels per second, it would take 320 seconds to clock the entire frame of 1280 pixels out in the NTSC readout mode. In 320 seconds, at a rate of 4 pixels per second, only 1280 pixels of the 1536 pixel frame would be clocked out in the still picture mode leaving 256 pixels left in the horizontal register; thus, showing that since*

there is not enough time process the 256 pixels, the clock frequency, i.e. transmission rate, of the horizontal register is the same for both modes.).

Allowable Subject Matter

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: As to claim 7, the prior art does not teach or fairly suggest an image sensing apparatus comprising: a controller for controlling a solid state image sensing device to move a first point disposed in an image sensing area of said solid state image sensing device to a center of an optical axis if a lens in a first picture taking mode and to move a second point different from said first position disposed in said image sensing area to the center of the optical axis of the lens in a second picture taking mode; wherein said first picture taking mode is a motion picture taking mode and said second picture taking mode is a high definition motion picture taking mode for generating a high definition motion picture signal of which a number of pixels per one frame is larger than that of said motion picture signal in combination with the rest of claim 5.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Daniels whose telephone number is (571) 272-7362. The examiner can normally be reached on 8:00 A.M. - 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AD
10/19/05

DAVID L. OMETZ
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EXAMINER